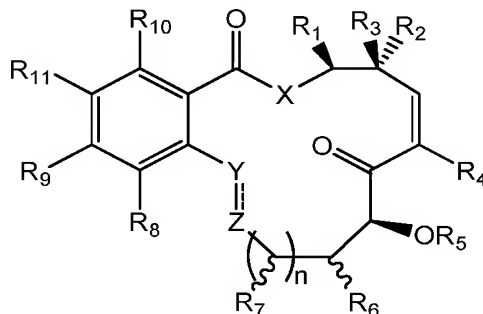


AMENDMENTS TO THE CLAIMS

1. (previously presented) A pharmaceutical composition for systemic administration comprising a pharmaceutically suitable carrier or diluent and a compound having the structure:



or a pharmaceutically acceptable salt or ester thereof; wherein

R₁ is hydrogen, C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ heteroalkyl, C₂-C₂₀ heteroalkenyl, C₂-C₂₀ heteroalkynyl, C₃-C₂₀ cycloalkyl, C₃-C₂₀ cycloalkenyl, C₃-C₂₀ cycloalkynyl, C₃-C₂₀ heterocycloalkyl, C₃-C₂₀ heterocycloalkenyl, C₃-C₂₀ heterocycloalkynyl, C₃-C₁₄ aryl or C₃-C₁₄ heteroaryl;

R₂ is C₁₋₆ alkyl;

R₃ is hydrogen, halogen, hydroxyl, protected hydroxyl, or a C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ heteroalkyl, C₂-C₂₀ heteroalkenyl, C₂-C₂₀ heteroalkynyl, C₃-C₂₀ cycloalkyl, C₃-C₂₀ cycloalkenyl, C₃-C₂₀ cycloalkynyl, C₃-C₂₀ heterocycloalkyl, C₃-C₂₀ heterocycloalkenyl, C₃-C₂₀ heterocycloalkynyl, C₃-C₁₄ aryl or C₃-C₁₄ heteroaryl moiety;

or

R₁ and R₃, when taken together, may form a saturated or unsaturated cyclic ring of 3 to 8 carbon atoms, optionally substituted with one or more occurrences of halogen;

R₄ is hydrogen or halogen;

R₅ is hydrogen or an oxygen protecting group;

R₆ is hydrogen, hydroxyl, or protected hydroxyl;

n is 0-2;

R₇, for each occurrence, is independently hydrogen, hydroxyl, or protected hydroxyl;

R₈ is hydrogen, halogen, hydroxyl, protected hydroxyl, alkyloxy, or a C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl or C₂-C₂₀ alkynyl moiety optionally substituted with hydroxyl, protected hydroxyl, SR₁₂, or NR₁₂R₁₃;

R₉ is hydrogen, halogen, hydroxyl, protected hydroxyl, OR₁₂, SR₁₂, NR₁₂R₁₃, -X₁(CH₂)_pX₂-R₁₄, or is lower alkyl optionally substituted with hydroxyl, protected hydroxyl, halogen, amino, protected amino, or -X₁(CH₂)_pX₂-R₁₄;

wherein R₁₂ and R₁₃ are, independently for each occurrence, hydrogen, C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ heteroalkyl, C₂-C₂₀ heteroalkenyl, C₂-C₂₀ heteroalkynyl, C₃-C₂₀ cycloalkyl, C₃-C₂₀ cycloalkenyl, C₃-C₂₀ cycloalkynyl, C₃-C₂₀ heterocycloalkyl, C₃-C₂₀ heterocycloalkenyl, C₃-C₂₀ heterocycloalkynyl, C₃-C₁₄ aryl or C₃-C₁₄ heteroaryl; or a nitrogen or oxygen protecting group, or R₁₂ and R₁₃, taken together may form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms, and each of R₁₂ and R₁₃ are optionally further substituted with one or more occurrences of hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen,

wherein X₁ and X₂ are each independently absent, or are oxygen, NH, or -N(alkyl), or wherein X₂-R₁₄ together are N₃ or are a saturated or unsaturated heterocyclic moiety,

p is 2-10, and

R₁₄ is hydrogen, or an C₃-C₁₄ aryl, C₃-C₁₄ heteroaryl, C₁-C₂₀alkyl(C₃-C₁₄)aryl, or C₁-C₂₀alkyl(C₃-C₁₄)heteroaryl moiety, or is -(C=O)NHR₁₅, -(C=O)OR₁₅, or -(C=O)R₁₅, wherein each occurrence of R₁₅ is independently hydrogen, C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ heteroalkyl, C₂-C₂₀ heteroalkenyl, C₂-C₂₀ heteroalkynyl, C₃-C₂₀ cycloalkyl, C₃-C₂₀ cycloalkenyl, C₃-C₂₀ cycloalkynyl, C₃-C₂₀ heterocycloalkyl, C₃-C₂₀ heterocycloalkenyl, C₃-C₂₀ heterocycloalkynyl, C₃-C₁₄ aryl or C₃-C₁₄ heteroaryl; or R₁₄ is -SO₂(R₁₆), wherein R₁₆ is a C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl or C₂-C₂₀ alkynyl moiety, wherein one or more of R₁₄, R₁₅, or R₁₆ are optionally substituted with one or more occurrences of hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen; or

R₈ and R₉ may, when taken together, form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms and is optionally substituted with

hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen;

R₁₀ is hydrogen, hydroxyl, protected hydroxyl, amino, or protected amino;

R₁₁ is hydrogen, hydroxyl or protected hydroxyl;

X is O;

Y is CHR₁₇, C=O, or CR₁₇; and Z is CHR₁₈, C=O, or CR₁₈, wherein each occurrence of R₁₇ and R₁₈ is independently hydrogen, C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl or C₂-C₂₀ alkynyl wherein Y and Z may be connected by a single or double bond;

wherein oxygen protecting groups are selected from the group consisting of methyl ethers, methoxymethyl ether, methylthiomethyl ether, benzyloxymethyl ether, p-methoxybenzyloxymethyl ether, ethyl ethers, benzyl ethers, silyl ethers, trimethylsilyl ether, triethylsilyl ether, triisopropylsilyl ether, t-butyl dimethylsilyl ether, tribenzyl silyl ether, t-butyl diphenyl silyl ether, esters, formate, acetate, benzoate, trifluoroacetate, dichloroacetate, carbonates, cyclic acetals and ketals and wherein nitrogen protecting groups are selected from the group consisting of carbamates, Troc, amides, cyclic imides, N-alkyl amines, N-aryl amines, imines, and enamines; and wherein C₃-C₁₄ heteroaryl moieties are selected from cyclic aromatic moieties having from five to ten ring atoms of which one ring atom is selected from S, O and N; zero, one or two ring atoms are additional heteroatoms independently selected from S, O and N; and the remaining ring atoms are carbon.

2. (previously presented) The composition of claim 1, wherein:

R₁ is hydrogen, straight or branched lower alkyl, straight or branched lower heteroalkyl, or C₃-C₁₄ aryl,

wherein the alkyl, heteroalkyl, and aryl groups may optionally be substituted with one or more occurrences of halogen, hydroxyl or protected hydroxyl;

R₂ is methyl;

R₃ is hydrogen, halogen, hydroxyl, protected hydroxyl, straight or branched lower alkyl, straight or branched lower heteroalkyl, or C₃-C₁₄ aryl,

wherein the alkyl, heteroalkyl, and aryl groups may optionally be substituted with one or more occurrences of halogen, hydroxyl or protected hydroxyl; or

R₁ and R₃, when taken together, may form a saturated or unsaturated cyclic ring of 3 to 8 carbon atoms, optionally substituted with one or more occurrences of halogen;

R₄ is hydrogen or halogen;

R₅ is hydrogen or a protecting group;

R₆ is hydrogen, hydroxyl, or protected hydroxyl;

n is 0-2;

R₇, for each occurrence, is independently hydrogen, hydroxyl, or protected hydroxyl;

R₈ is hydrogen, halogen, hydroxyl, protected hydroxyl, alkyloxy, or lower alkyl optionally substituted with hydroxyl, protected hydroxyl, SR₁₂, or NR₁₂R₁₃;

R₉ is hydrogen, halogen, hydroxyl, protected hydroxyl, OR₁₂, SR₁₂, NR₁₂R₁₃, -X₁(CH₂)_pX₂-R₁₄, or is lower alkyl optionally substituted with hydroxyl, protected hydroxyl, halogen, amino, protected amino, or -X₁(CH₂)_pX₂-R₁₄;

wherein R₁₂ and R₁₃ are, independently for each occurrence, hydrogen, lower alkyl, C₃-C₁₄ aryl, C₃-C₁₄ heteroaryl, alkyl(C₃-C₁₄)aryl, or alkyl(C₃-C₁₄)heteroaryl, or a nitrogen or oxygen protecting group, or R₁₂ and R₁₃, taken together may form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms, and each of R₁₂ and R₁₃ are optionally further substituted with one or more occurrences of hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen,

wherein X₁ and X₂ are each independently absent, or are oxygen, NH, or -N(alkyl), or wherein X₂-R₁₄ together are N₃ or are a saturated or unsaturated heterocyclic moiety, p is 2-10, and

R₁₄ is hydrogen, or a C₃-C₁₄ aryl, C₃-C₁₄ heteroaryl, alkyl(C₃-C₁₄)aryl, or alkyl(C₃-C₁₄)heteroaryl moiety, or is -(C=O)NHR₁₅, -(C=O)OR₁₅, or -(C=O)R₁₅, wherein each occurrence of R₁₅ is independently hydrogen, alkyl, heteroalkyl, C₃-C₁₄ aryl, C₃-C₁₄ heteroaryl, alkyl(C₃-C₁₄)aryl, or alkyl(C₃-C₁₄)heteroaryl, or R₁₄ is -SO₂(R₁₆), wherein R₁₆ is an alkyl moiety, wherein one or more of R₁₄, R₁₅, or R₁₆ are optionally substituted with one or more occurrences of hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen; or

R₈ and R₉ may, when taken together, form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms and is optionally substituted with

hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen;

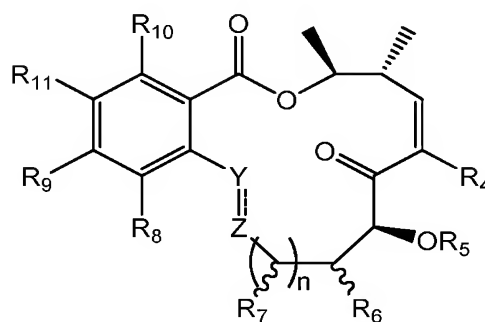
R₁₀ is hydrogen, hydroxyl, protected hydroxyl, amino, or protected amino;

R₁₁ is hydrogen, hydroxyl or protected hydroxyl;

X is O;

Y is CHR₁₇, C=O, or CR₁₇; and Z is CHR₁₈, C=O, or CR₁₈, wherein each occurrence of R₁₇ and R₁₈ is independently hydrogen or lower alkyl, wherein Y and Z may be connected by a single or double bond.

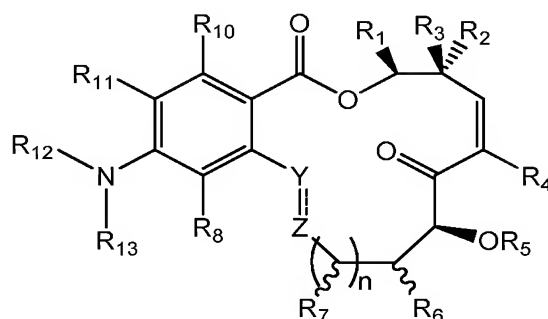
3. (currently amended) The composition of claim 2, where ~~and~~ n is 1.
4. (original) The composition of claim 2, where R₄ is halogen.
5. (original) The composition of claim 2, where R₄ is fluorine.
6. (original) The composition of claim 2, where Y and Z together represent -CH=CH-.
7. (original) The composition of claim 2, where Y and Z together represent trans -CH=CH-.
8. (previously presented) The composition of claim 2, wherein R₁ and R₂ are each methyl and R₃ is hydrogen and the compound has the structure:



wherein R₄-R₁₁, n, Y and Z are as defined in claim 2.

9. (previously presented) The composition of claim 8, wherein n is 1.
10. (original) The composition of claim 8, wherein R₄ is halogen.

11. (original) The composition of claim 8, wherein Y and Z together represent $-\text{CH}=\text{CH}-$.
12. (previously presented) The composition of claim 8, wherein n is 1, R_4 is halogen and Y and Z together represent $-\text{CH}=\text{CH}-$.
13. (original) The composition of claim 11 or 12 wherein $-\text{CH}=\text{CH}-$ is trans.
14. (currently amended) A pharmaceutical composition for systemic administration comprising a pharmaceutically suitable carrier or diluent and a compound having the structure:



or a pharmaceutically acceptable salt or ester thereof; wherein

R_1 is hydrogen, straight or branched lower alkyl, straight or branched lower heteroalkyl, or $\text{C}_3\text{-C}_{14}$ aryl,

wherein the alkyl, heteroalkyl, and aryl groups may optionally be substituted with one or more occurrences of halogen, hydroxyl or protected hydroxyl;

R_2 is C_{1-6} alkyl;

R_3 is hydrogen, halogen, hydroxyl, protected hydroxyl, straight or branched lower alkyl, straight or branched lower heteroalkyl, or $\text{C}_3\text{-C}_{14}$ aryl,

wherein the alkyl, heteroalkyl, and aryl groups may optionally be substituted with one or more occurrences of halogen, hydroxyl or protected hydroxyl; or

R_1 and R_3 , when taken together, may form a saturated or unsaturated cyclic ring of 3 to 8 carbon atoms, optionally substituted with one or more occurrences of halogen;

R_4 is hydrogen or halogen;

R_5 is hydrogen or a protecting group;

R_6 is hydrogen, hydroxyl, or protected hydroxyl;

n is 0-2;

R₇, for each occurrence, is independently hydrogen, hydroxyl, or protected hydroxyl;
R₈ is hydrogen, halogen, hydroxyl, protected hydroxyl, alkyloxy, or lower alkyl optionally substituted with hydroxyl, protected hydroxyl, SR₁₂, or NR₁₂R₁₃;
R₁₂ and R₁₃ are, independently for each occurrence, hydrogen, lower alkyl, C₃-C₁₄ aryl, C₃-C₁₄ heteroaryl, alkyl(C₃-C₁₄)aryl, or alkyl(C₃-C₁₄)heteroaryl, or a nitrogen or oxygen protecting group, or R₁₂ and R₁₃, taken together may form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms, and each of R₁₂ and R₁₃ are optionally further substituted with one or more occurrences of hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen,

R₁₀ is hydrogen, hydroxyl, protected hydroxyl, amino, or protected amino;

R₁₁ is hydrogen, hydroxyl or protected hydroxyl;

~~X~~ is O;

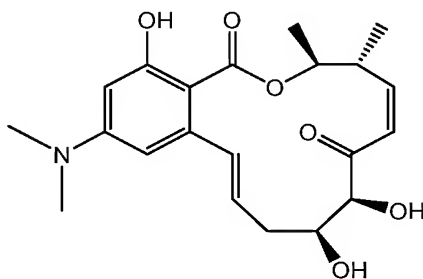
Y is CHR₁₇, C=O, or CR₁₇; and Z is CHR₁₈, C=O, or CR₁₈, wherein each occurrence of R₁₇ and R₁₈ is independently hydrogen or lower alkyl, wherein Y and Z may be connected by a single or double bond, or

R₁₃ and R₈ may, when taken together, form a cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms and is optionally substituted with hydrogen, alkyloxy, amino, alkylamino, aminoalkyl, and halogen;

wherein oxygen protecting groups are selected from the group consisting of methyl ethers, methoxymethyl ether, methylthiomethyl ether, benzyloxymethyl ether, p-methoxybenzyloxymethyl ether, ethyl ethers, benzyl ethers, silyl ethers, trimethylsilyl ether, triethylsilylether, triisopropylsilyl ether, t-butyldimethylsilyl ether, tribenzyl silyl ether, t-butyldiphenyl silyl ether, esters, formate, acetate, benzoate, trifluoroacetate, dichloroacetate, carbonates, cyclic acetals and ketals and wherein nitrogen protecting groups are selected from the group consisting of carbamates, Troc, amides, cyclic imides, N-alkyl amines, N-aryl amines, imines, and enamines; and

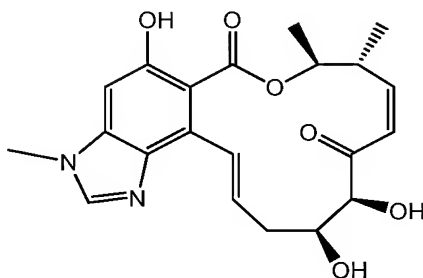
wherein C₃-C₁₄ heteroaryl moieties are selected from cyclic aromatic moieties having from five to ten ring atoms of which one ring atom is selected from S, O and N; zero, one or two ring atoms are additional heteroatoms independently selected from S, O and N; and the remaining ring atoms are carbon.

15. (previously presented) The composition of claim 14, wherein n is 1.
16. (original) The composition of claim 14, wherein R_4 is halogen.
17. (original) The composition of claim 14, wherein Y and Z together represent $-\text{CH}=\text{CH}-$.
18. (original) The composition of claim 14, wherein R_1 and R_2 are each methyl and R_3 is hydrogen.
19. (previously presented) The composition of claim 14, wherein n is 1, R_1 and R_2 are each methyl, R_3 is hydrogen, R_4 is halogen, and Y and Z together represent $-\text{CH}=\text{CH}-$.
20. (original) The composition of claim 17 or 19, wherein $-\text{CH}=\text{CH}-$ is trans.
- 21-22. (cancelled)
23. (previously presented) The composition of claim 14, wherein the compound has the structure:



or a pharmaceutically acceptable salt or ester thereof.

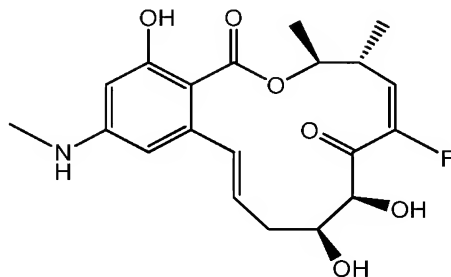
24. (previously presented) The composition of claim 14, wherein the compound has the structure:



or a pharmaceutically acceptable salt or ester thereof.

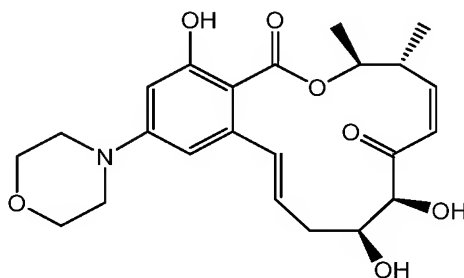
25-26. (cancelled)

27. (previously presented) The composition of claim 14, wherein the compound has the structure:



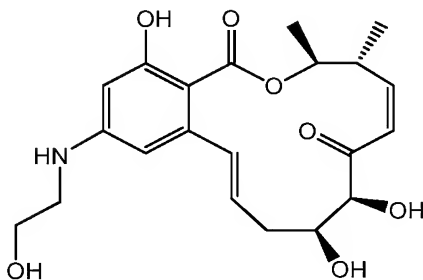
or a pharmaceutically acceptable salt or ester thereof.

28. (previously presented) The composition of claim 14, wherein the compound has the structure:



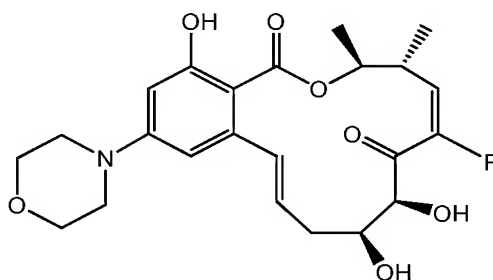
or a pharmaceutically acceptable salt or ester thereof.

29. (previously presented) The composition of claim 14, wherein the compound has the structure:



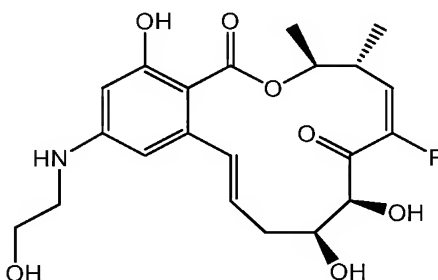
or a pharmaceutically acceptable salt or ester thereof.

30. (previously presented) The composition of claim 14, wherein the compound has the structure:



or a pharmaceutically acceptable salt or ester thereof.

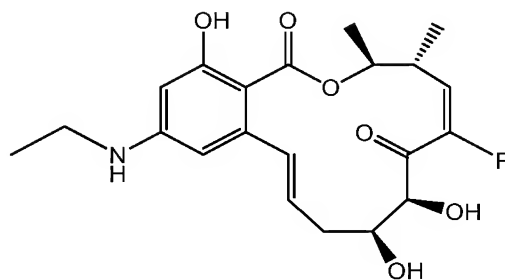
31. (previously presented) The composition of claim 14, wherein the compound has the structure:



or a pharmaceutically acceptable salt or ester thereof.

32. (cancelled)

33. (previously presented) The composition of claim 14, wherein the compound has the structure:

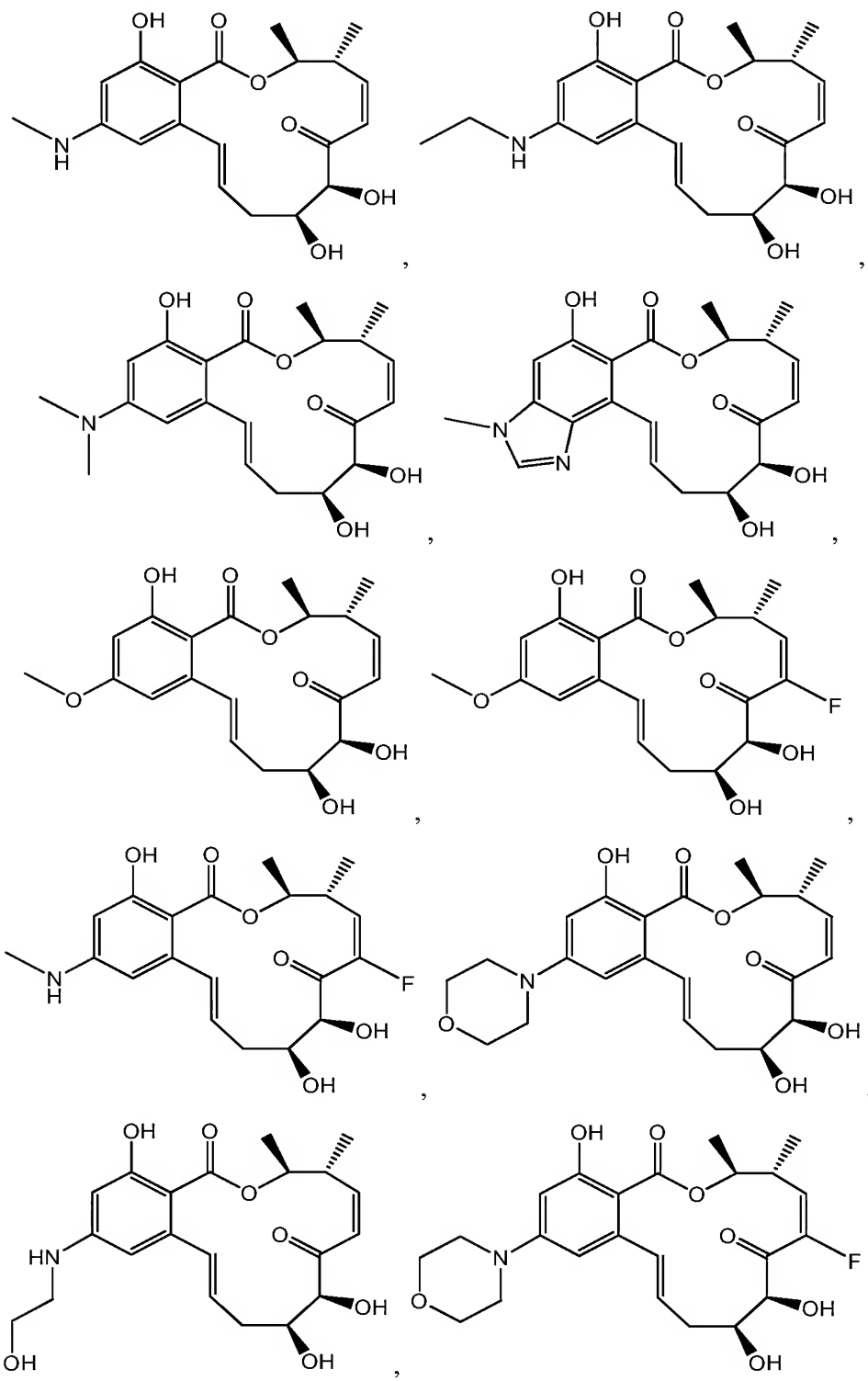


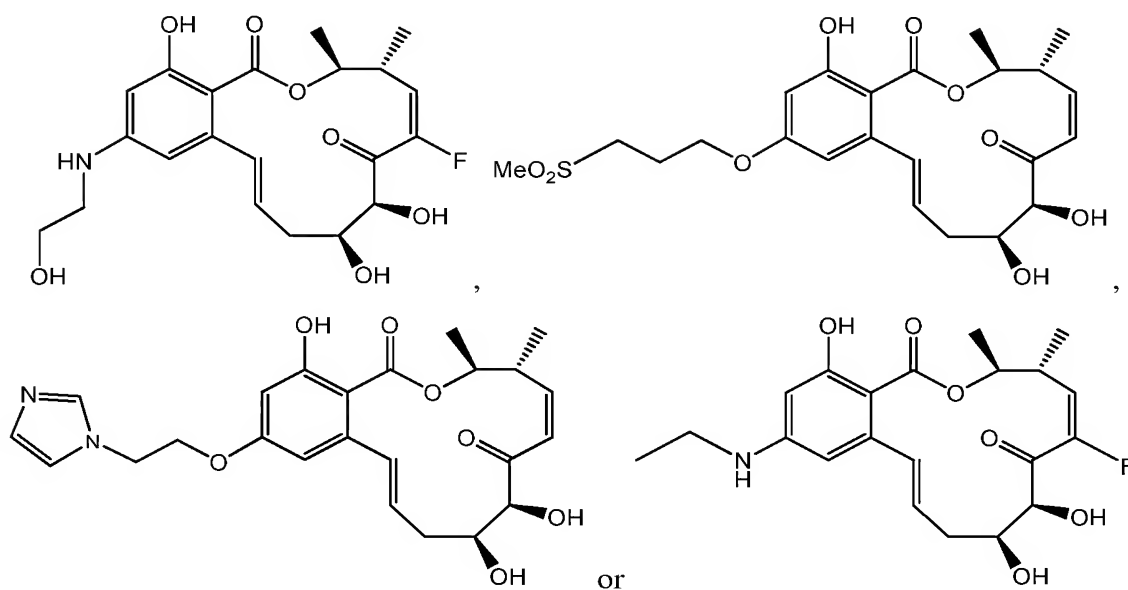
or a pharmaceutically acceptable salt or ester thereof.

- 34-35. (cancelled)

36. (withdrawn) The pharmaceutical composition of claim 1, wherein the composition is for oral administration.
37. (cancelled)
38. (withdrawn) The pharmaceutical composition of claim 1, wherein the compound is present in an amount effective to inhibit production of a pro-inflammatory and/or immunologic cytokine selected from the group consisting of TNF α , IL-1, IL-6, IL-8 and IL-2.
39. (withdrawn) A method for treating rheumatoid arthritis, psoriasis, asthma, sepsis, inflammatory bowel disease, atopic dermatitis or Crohn's disease comprising the step of systemically administering to a subject in need thereof a therapeutically effective amount of a pharmaceutical composition of claim 1.
40. (withdrawn) The method of claim 39, wherein the compound is administered orally.
41. (cancelled)
42. (withdrawn) The method of claim 39, wherein the method is for treating psoriasis.

43. (withdrawn) The method of claim 39, wherein the compound has any one of the following structures:





or pharmaceutically acceptable salt or ester thereof.

44-45. (cancelled)

46. (withdrawn) The composition of claim 2, where R_1 is hydrogen or methyl.

47. (withdrawn) The composition of claim 2, where R_3 is hydrogen or halogen.

48. (withdrawn) The composition of claim 2, where R_4 is hydrogen.

49. (withdrawn) The composition of claim 2, where R_5 is hydrogen.

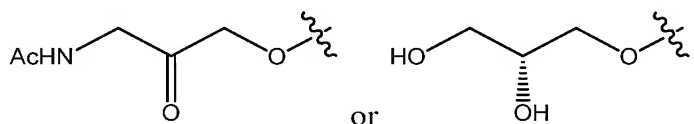
50. (withdrawn) The composition of claim 2, where R_6 is hydroxyl.

51. (withdrawn) The composition of claim 2, where R_7 is hydrogen or hydroxyl.

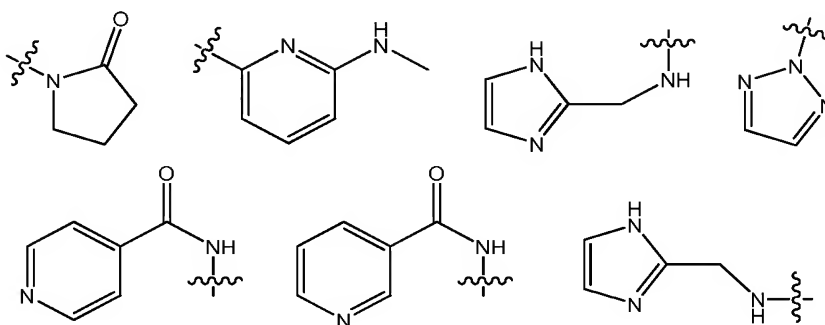
52. (withdrawn) The composition of claim 2, where R_8 is hydrogen or halogen.

53. (withdrawn) The composition of claim 2, where R_9 is hydroxyl, protected hydroxyl, - OR_{12} , - $NR_{12}R_{13}$, or - $O(CH_2)_pX_2-R_{14}$, wherein R_{12} , R_{13} , R_{14} and X_2 are as defined in claim 2.

54. (withdrawn) The composition of claim 53, where R_9 is $-OR_{12}$, wherein R_{12} is methyl, ethyl, propyl, isopropyl, butyl, $-\text{CH}_2\text{COOMe}$, Bn, PMB (MPM), 3,4-CIBn, or R_9 is

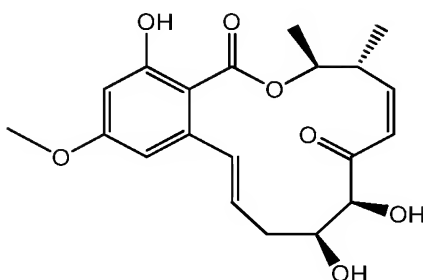


55. (withdrawn) The composition of claim 53, where R_9 is $-\text{NR}_{12}\text{R}_{13}$, or wherein R_{12} is methyl, ethyl, propyl, isopropyl, or butyl, optionally substituted with one or more occurrences of hydroxyl or protected hydroxyl, and R_{13} is hydrogen or lower alkyl, or $\text{NR}_{12}\text{R}_{13}$ together represents a 5- or 6- membered heterocyclic moiety.
56. (withdrawn) The composition of claim 53, where R_9 is $-\text{O}(\text{CH}_2)_p\text{X}_2\text{-R}_{14}$, wherein $\text{X}_2\text{-R}_{14}$ together represent N_3 , NMe_2 , NHAc , NHSO_2Me , NHCONHMe , NHCONHPh , morpholine, imidazole, aminopyridine, or any one of:



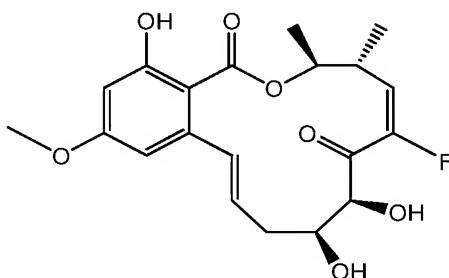
57. (withdrawn) The composition of claim 2, where R_8 and R_9 , taken together, form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms and is optionally substituted with hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen.
58. (withdrawn) The composition of claim 2, where R_{10} is hydroxyl.
59. (withdrawn) The composition of claim 2, where R_{11} is hydrogen.
60. (withdrawn) The composition of claim 2, where Y and Z together are cyclopropyl.
61. (cancelled)

62. (previously presented) The composition of claim 1 wherein the compound has the structure:



or a pharmaceutically acceptable salt or ester thereof.

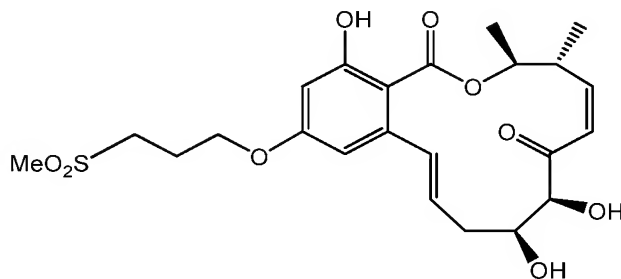
63. (previously presented) The composition of claim 1 wherein the compound has the structure:



or a pharmaceutically acceptable salt or ester thereof.

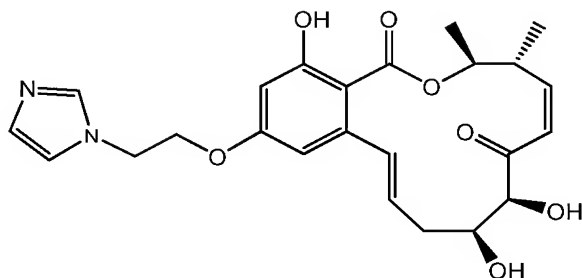
64. (cancelled)

65. (previously presented) The composition of claim 1 wherein the compound has the structure:



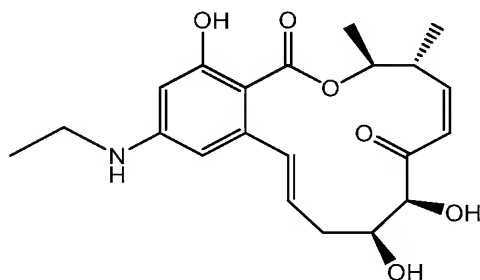
or a pharmaceutically acceptable salt or ester thereof.

66. (previously presented) The composition of claim 1 wherein the compound has the structure:



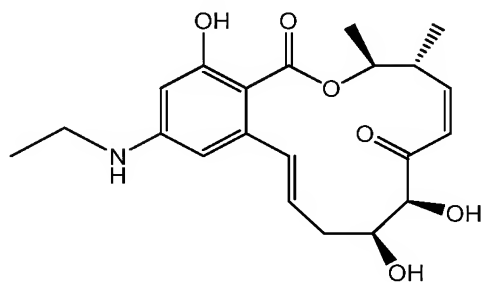
or a pharmaceutically acceptable salt or ester thereof.

67. (currently amended) A pharmaceutical composition for systemic administration comprising a pharmaceutically suitable carrier or diluent and a compound having the structure:

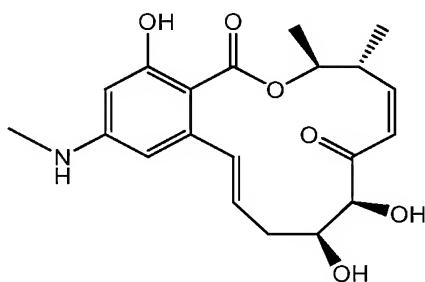


or a pharmaceutically acceptable salt, ester, or salt of ester thereof.

68. (new) The composition of claim 67, having the structure:

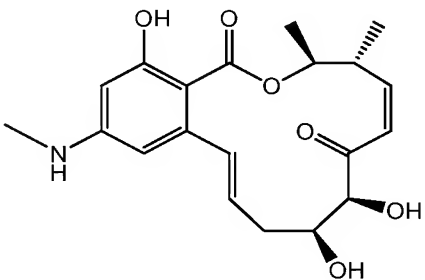


69. (new) A pharmaceutical composition for systemic administration comprising a pharmaceutically suitable carrier or diluent and a compound having the structure:

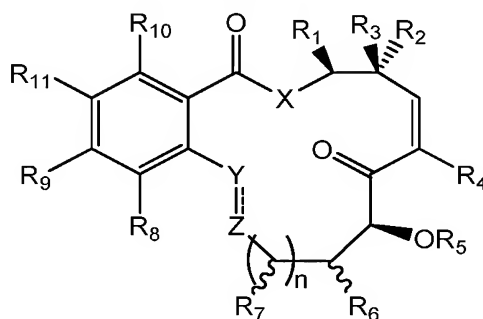


or a pharmaceutically acceptable salt, ester, or salt of ester thereof.

70. (new) The composition of claim 69, having the structure:



71. (new) A pharmaceutical composition comprising a pharmaceutically suitable carrier or diluent and a compound having the structure:



or a pharmaceutically acceptable salt or ester or salt of ester thereof; wherein

R_1 is hydrogen, C_1 - C_{20} alkyl, C_2 - C_{20} alkenyl, C_2 - C_{20} alkynyl, C_1 - C_{20} heteroalkyl, C_2 - C_{20} heteroalkenyl, C_2 - C_{20} heteroalkynyl, C_3 - C_{20} cycloalkyl, C_3 - C_{20} cycloalkenyl, C_3 - C_{20} cycloalkynyl, C_3 - C_{20} heterocycloalkyl, C_3 - C_{20} heterocycloalkenyl, C_3 - C_{20} heterocycloalkynyl, C_3 - C_{14} aryl or C_3 - C_{14} heteroaryl;

R_2 is C_{1-6} alkyl;

R₃ is hydrogen, halogen, hydroxyl, protected hydroxyl, or a C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ heteroalkyl, C₂-C₂₀ heteroalkenyl, C₂-C₂₀ heteroalkynyl, C₃-C₂₀ cycloalkyl, C₃-C₂₀ cycloalkenyl, C₃-C₂₀ cycloalkynyl, C₃-C₂₀ heterocycloalkyl, C₃-C₂₀ heterocycloalkenyl, C₃-C₂₀ heterocycloalkynyl, C₃-C₁₄ aryl or C₃-C₁₄ heteroaryl moiety;
or

R₁ and R₃, when taken together, may form a saturated or unsaturated cyclic ring of 3 to 8 carbon atoms, optionally substituted with one or more occurrences of halogen;

R₄ is hydrogen or halogen;

R₅ is hydrogen or an oxygen protecting group;

R₆ is hydrogen, hydroxyl, or protected hydroxyl;

n is 0-2;

R₇, for each occurrence, is independently hydrogen, hydroxyl, or protected hydroxyl;

R₈ is hydrogen, halogen, hydroxyl, protected hydroxyl, alkyloxy, or a C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl or C₂-C₂₀ alkynyl moiety optionally substituted with hydroxyl, protected hydroxyl, SR₁₂, or NR₁₂R₁₃;

R₉ is hydrogen, halogen, hydroxyl, protected hydroxyl, OR₁₂, SR₁₂, NR₁₂R₁₃,

-X₁(CH₂)_pX₂-R₁₄, or is lower alkyl optionally substituted with hydroxyl, protected hydroxyl, halogen, amino, protected amino, or -X₁(CH₂)_pX₂-R₁₄;

wherein R₁₂ and R₁₃ are, independently for each occurrence, hydrogen, C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ heteroalkyl, C₂-C₂₀ heteroalkenyl, C₂-C₂₀ heteroalkynyl, C₃-C₂₀ cycloalkyl, C₃-C₂₀ cycloalkenyl, C₃-C₂₀ cycloalkynyl, C₃-C₂₀ heterocycloalkyl, C₃-C₂₀ heterocycloalkenyl, C₃-C₂₀ heterocycloalkynyl, C₃-C₁₄ aryl or C₃-C₁₄ heteroaryl; or a nitrogen or oxygen protecting group, or R₁₂ and R₁₃, taken together may form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms, and each of R₁₂ and R₁₃ are optionally further substituted with one or more occurrences of hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen,

wherein X₁ and X₂ are each independently absent, or are oxygen, NH, or

-N(alkyl), or wherein X₂-R₁₄ together are N₃ or are a saturated or unsaturated heterocyclic moiety,

p is 2-10, and

R_{14} is hydrogen, or an C_3 - C_{14} aryl, C_3 - C_{14} heteroaryl, C_1 - C_{20} alkyl(C_3 - C_{14})aryl, or C_1 - C_{20} alkyl(C_3 - C_{14})heteroaryl moiety, or is $-(C=O)NHR_{15}$, $-(C=O)OR_{15}$, or $-(C=O)R_{15}$, wherein each occurrence of R_{15} is independently hydrogen, C_1 - C_{20} alkyl, C_2 - C_{20} alkenyl, C_2 - C_{20} alkynyl, C_1 - C_{20} heteroalkyl, C_2 - C_{20} heteroalkenyl, C_2 - C_{20} heteroalkynyl, C_3 - C_{20} cycloalkyl, C_3 - C_{20} cycloalkenyl, C_3 - C_{20} cycloalkynyl, C_3 - C_{20} heterocycloalkyl, C_3 - C_{20} heterocycloalkenyl, C_3 - C_{20} heterocycloalkynyl, C_3 - C_{14} aryl or C_3 - C_{14} heteroaryl; or R_{14} is $-SO_2(R_{16})$, wherein R_{16} is a C_1 - C_{20} alkyl, C_2 - C_{20} alkenyl or C_2 - C_{20} alkynyl moiety, wherein one or more of R_{14} , R_{15} , or R_{16} are optionally substituted with one or more occurrences of hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen; or

R_8 and R_9 may, when taken together, form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms and is optionally substituted with hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen;

R_{10} is hydrogen, hydroxyl, protected hydroxyl, amino, or protected amino;

R_{11} is hydrogen, hydroxyl or protected hydroxyl;

X is O;

Y is CHR_{17} , $C=O$, or CR_{17} ; and Z is CHR_{18} , $C=O$, or CR_{18} , wherein each occurrence of R_{17} and R_{18} is independently hydrogen, C_1 - C_{20} alkyl, C_2 - C_{20} alkenyl or C_2 - C_{20} alkynyl wherein Y and Z may be connected by a single or double bond;

wherein oxygen protecting groups are selected from the group consisting of methyl ethers, methoxymethyl ether, methylthiomethyl ether, benzyloxymethyl ether, p-methoxybenzyloxymethyl ether, ethyl ethers, benzyl ethers, silyl ethers, trimethylsilyl ether, triethylsilylether, triisopropylsilyl ether, t-butyldimethylsilyl ether, tribenzyl silyl ether, t-butyldiphenyl silyl ether, esters, formate, acetate, benzoate, trifluoroacetate, dichloroacetate, carbonates, cyclic acetals and ketals and wherein nitrogen protecting groups are selected from the group consisting of carbamates, Troc, amides, cyclic imides, N-alkyl amines, N-aryl amines, imines, and enamines; and

wherein C_3 - C_{14} heteroaryl moieties are selected from cyclic aromatic moieties having from five to ten ring atoms of which one ring atom is selected from S, O and N; zero, one or two ring atoms are additional heteroatoms independently selected from S, O and N; and the remaining ring atoms are carbon.

72. (new) The composition of claim 71, wherein:

R₁ is hydrogen, straight or branched lower alkyl, straight or branched lower heteroalkyl, or C₃-C₁₄ aryl,

wherein the alkyl, heteroalkyl, and aryl groups may optionally be substituted with one or more occurrences of halogen, hydroxyl or protected hydroxyl;

R₂ is methyl;

R₃ is hydrogen, halogen, hydroxyl, protected hydroxyl, straight or branched lower alkyl, straight or branched lower heteroalkyl, or C₃-C₁₄ aryl,

wherein the alkyl, heteroalkyl, and aryl groups may optionally be substituted with one or more occurrences of halogen, hydroxyl or protected hydroxyl; or

R₁ and R₃, when taken together, may form a saturated or unsaturated cyclic ring of 3 to 8 carbon atoms, optionally substituted with one or more occurrences of halogen;

R₄ is hydrogen or halogen;

R₅ is hydrogen or a protecting group;

R₆ is hydrogen, hydroxyl, or protected hydroxyl;

n is 0-2;

R₇, for each occurrence, is independently hydrogen, hydroxyl, or protected hydroxyl;

R₈ is hydrogen, halogen, hydroxyl, protected hydroxyl, alkyloxy, or lower alkyl optionally substituted with hydroxyl, protected hydroxyl, SR₁₂, or NR₁₂R₁₃;

R₉ is hydrogen, halogen, hydroxyl, protected hydroxyl, OR₁₂, SR₁₂, NR₁₂R₁₃, -X₁(CH₂)_pX₂-R₁₄, or is lower alkyl optionally substituted with hydroxyl, protected hydroxyl, halogen, amino, protected amino, or -X₁(CH₂)_pX₂-R₁₄;

wherein R₁₂ and R₁₃ are, independently for each occurrence, hydrogen, lower alkyl, C₃-C₁₄ aryl, C₃-C₁₄ heteroaryl, alkyl(C₃-C₁₄)aryl, or alkyl(C₃-C₁₄)heteroaryl, or a nitrogen or oxygen protecting group, or R₁₂ and R₁₃, taken together may form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms, and each of R₁₂ and R₁₃ are optionally further substituted with one or more occurrences of hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen,

wherein X₁ and X₂ are each independently absent, or are oxygen, NH, or -N(alkyl), or wherein X₂-R₁₄ together are N₃ or are a saturated or unsaturated heterocyclic moiety, p is 2-10, and

R₁₄ is hydrogen, or a C₃-C₁₄ aryl, C₃-C₁₄ heteroaryl, alkyl(C₃-C₁₄)aryl, or alkyl(C₃-C₁₄)heteroaryl moiety, or is -(C=O)NHR₁₅, -(C=O)OR₁₅, or -(C=O)R₁₅, wherein each occurrence of R₁₅ is independently hydrogen, alkyl, heteroalkyl, C₃-C₁₄ aryl, C₃-C₁₄ heteroaryl, alkyl(C₃-C₁₄)aryl, or alkyl(C₃-C₁₄)heteroaryl, or R₁₄ is -SO₂(R₁₆), wherein R₁₆ is an alkyl moiety, wherein one or more of R₁₄, R₁₅, or R₁₆ are optionally substituted with one or more occurrences of hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen; or

R₈ and R₉ may, when taken together, form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms and is optionally substituted with hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen;

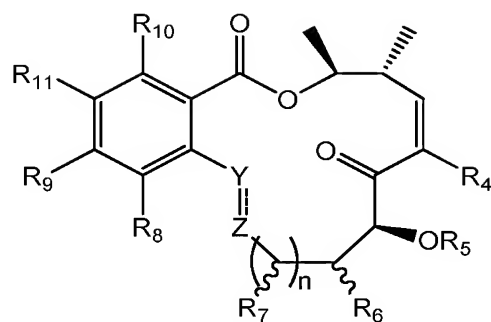
R₁₀ is hydrogen, hydroxyl, protected hydroxyl, amino, or protected amino;

R₁₁ is hydrogen, hydroxyl or protected hydroxyl;

X is O;

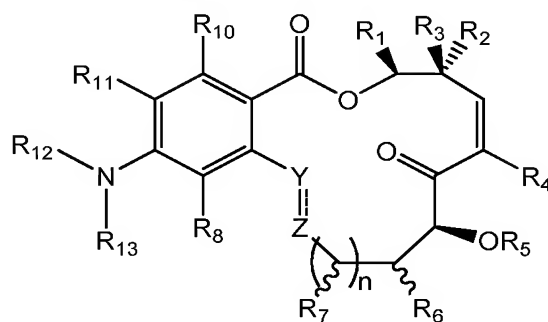
Y is CHR₁₇, C=O, or CR₁₇; and Z is CHR₁₈, C=O, or CR₁₈, wherein each occurrence of R₁₇ and R₁₈ is independently hydrogen or lower alkyl, wherein Y and Z may be connected by a single or double bond.

73. (new) The composition of claim 72, where n is 1.
74. (new) The composition of claim 72, where R₄ is halogen.
75. (new) The composition of claim 72, where R₄ is fluorine.
76. (new) The composition of claim 72, where Y and Z together represent -CH=CH-.
77. (new) The composition of claim 72, where Y and Z together represent trans -CH=CH-.
78. (new) The composition of claim 72, wherein R₁ and R₂ are each methyl and R₃ is hydrogen and the compound has the structure:



wherein R_4 - R_{11} , n , Y and Z are as defined in claim 2.

79. (new) The composition of claim 78, wherein n is 1.
80. (new) The composition of claim 78, wherein R_4 is halogen.
81. (new) The composition of claim 78, wherein Y and Z together represent $-\text{CH}=\text{CH}-$.
82. (new) The composition of claim 78, wherein n is 1, R_4 is halogen and Y and Z together represent $-\text{CH}=\text{CH}-$.
83. (new) The composition of claim 81 or 82 wherein $-\text{CH}=\text{CH}-$ is trans.
84. (new) A pharmaceutical composition comprising a pharmaceutically suitable carrier or diluent and a compound having the structure:



or a pharmaceutically acceptable salt or ester or salt of ester thereof; wherein

R_1 is hydrogen, straight or branched lower alkyl, straight or branched lower heteroalkyl, or C_3 - C_{14} aryl,

wherein the alkyl, heteroalkyl, and aryl groups may optionally be substituted with one or more occurrences of halogen, hydroxyl or protected hydroxyl;

R₂ is C₁₋₆ alkyl;

R₃ is hydrogen, halogen, hydroxyl, protected hydroxyl, straight or branched lower alkyl, straight or branched lower heteroalkyl, or C₃-C₁₄ aryl,

wherein the alkyl, heteroalkyl, and aryl groups may optionally be substituted with one or more occurrences of halogen, hydroxyl or protected hydroxyl; or

R₁ and R₃, when taken together, may form a saturated or unsaturated cyclic ring of 3 to 8 carbon atoms, optionally substituted with one or more occurrences of halogen;

R₄ is hydrogen or halogen;

R₅ is hydrogen or a protecting group;

R₆ is hydrogen, hydroxyl, or protected hydroxyl;

n is 0-2;

R₇, for each occurrence, is independently hydrogen, hydroxyl, or protected hydroxyl;

R₈ is hydrogen, halogen, hydroxyl, protected hydroxyl, alkyloxy, or lower alkyl optionally substituted with hydroxyl, protected hydroxyl, SR₁₂, or NR₁₂R₁₃;

R₁₂ and R₁₃ are, independently for each occurrence, hydrogen, lower alkyl, C₃-C₁₄ aryl, C₃-C₁₄ heteroaryl, alkyl(C₃-C₁₄)aryl, or alkyl(C₃-C₁₄)heteroaryl, or a nitrogen or oxygen protecting group, or R₁₂ and R₁₃, taken together may form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms, and each of R₁₂ and R₁₃ are optionally further substituted with one or more occurrences of hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen,

R₁₀ is hydrogen, hydroxyl, protected hydroxyl, amino, or protected amino;

R₁₁ is hydrogen, hydroxyl or protected hydroxyl;

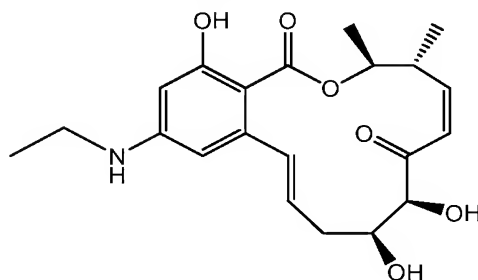
Y is CHR₁₇, C=O, or CR₁₇; and Z is CHR₁₈, C=O, or CR₁₈, wherein each occurrence of R₁₇ and R₁₈ is independently hydrogen or lower alkyl, wherein Y and Z may be connected by a single or double bond, or

R₁₃ and R₈ may, when taken together, form a cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen atoms and is optionally substituted with hydrogen, alkyloxy, amino, alkylamino, aminoalkyl, and halogen;

wherein oxygen protecting groups are selected from the group consisting of methyl ethers, methoxymethyl ether, methylthiomethyl ether, benzyloxymethyl ether, p-methoxybenzyloxymethyl ether, ethyl ethers, benzyl ethers, silyl ethers, trimethylsilyl

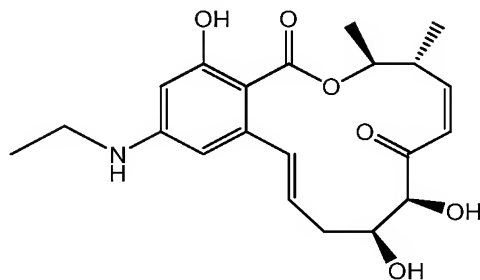
ether, triethylsilyl ether, triisopropylsilyl ether, t-butyldimethylsilyl ether, tribenzyl silyl ether, t-butyldiphenyl silyl ether, esters, formate, acetate, benzoate, trifluoroacetate, dichloroacetate, carbonates, cyclic acetals and ketals and wherein nitrogen protecting groups are selected from the group consisting of carbamates, Troc, amides, cyclic imides, N-alkyl amines, N-aryl amines, imines, and enamines; and wherein C_3 - C_{14} heteroaryl moieties are selected from cyclic aromatic moieties having from five to ten ring atoms of which one ring atom is selected from S, O and N; zero, one or two ring atoms are additional heteroatoms independently selected from S, O and N; and the remaining ring atoms are carbon.

85. (new) The composition of claim 84, wherein n is 1.
86. (new) The composition of claim 84, wherein R_4 is halogen.
87. (new) The composition of claim 84, wherein Y and Z together represent $-\text{CH}=\text{CH}-$.
88. (new) The composition of claim 84, wherein R_1 and R_2 are each methyl and R_3 is hydrogen.
89. (new) The composition of claim 84, wherein n is 1, R_1 and R_2 are each methyl, R_3 is hydrogen, R_4 is halogen, and Y and Z together represent $-\text{CH}=\text{CH}-$.
90. (new) The composition of claim 87 or 89, wherein $-\text{CH}=\text{CH}-$ is trans.
91. (new) A pharmaceutical composition comprising a pharmaceutically suitable carrier or diluent and a compound having the structure:

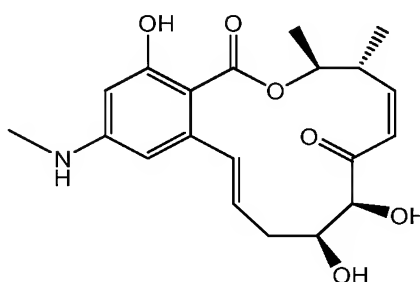


or a pharmaceutically acceptable salt, ester, or salt of ester thereof.

92. (new) The composition of claim 91, having the structure:

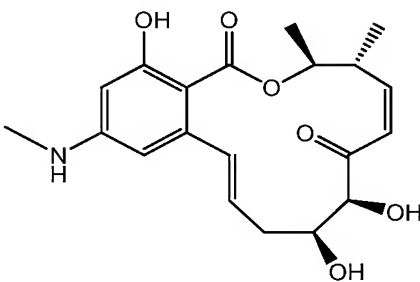


93. (new) A pharmaceutical composition comprising a pharmaceutically suitable carrier or diluent and a compound having the structure:



or a pharmaceutically acceptable salt, ester, or salt of ester thereof.

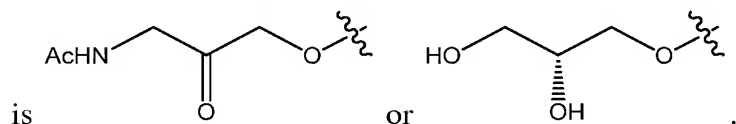
94. (new) The composition of claim 93, having the structure:



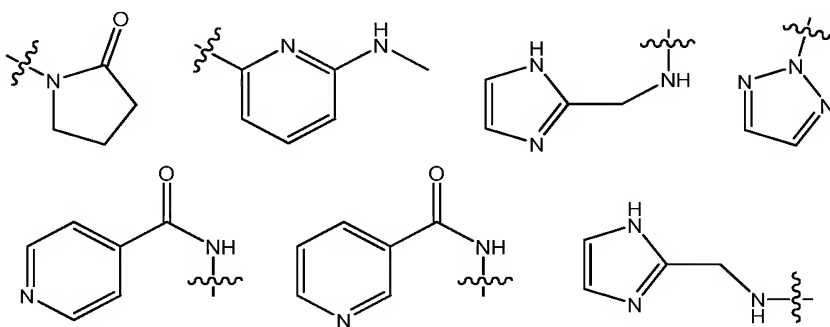
95. (withdrawn-new) The composition of claim 72, where R₁ is hydrogen or methyl.
96. (withdrawn-new) The composition of claim 72, where R₃ is hydrogen or halogen.
97. (withdrawn-new) The composition of claim 72, where R₄ is hydrogen.
98. (withdrawn-new) The composition of claim 72, where R₅ is hydrogen.

99. (withdrawn-new) The composition of claim 72, where R_6 is hydroxyl.
100. (withdrawn-new) The composition of claim 72, where R_7 is hydrogen or hydroxyl.
101. (withdrawn-new) The composition of claim 72, where R_8 is hydrogen or halogen.
102. (withdrawn-new) The composition of claim 72, where R_9 is hydroxyl, protected hydroxyl, $-OR_{12}$, $-NR_{12}R_{13}$, or $-O(CH_2)_pX_2-R_{14}$, wherein R_{12} , R_{13} , R_{14} and X_2 are as defined in claim 2.

103. (withdrawn-new) The composition of claim 102, where R_9 is $-OR_{12}$, wherein R_{12} is methyl, ethyl, propyl, isopropyl, butyl, $-CH_2COOMe$, Bn, PMB (MPM), 3,4-CIBn, or R_9



104. (withdrawn-new) The composition of claim 102, where R_9 is $-NR_{12}R_{13}$, or wherein R_{12} is methyl, ethyl, propyl, isopropyl, or butyl, optionally substituted with one or more occurrences of hydroxyl or protected hydroxyl, and R_{13} is hydrogen or lower alkyl, or $NR_{12}R_{13}$ together represents a 5- or 6- membered heterocyclic moiety.
105. (withdrawn-new) The composition of claim 102, where R_9 is $-O(CH_2)_pX_2-R_{14}$, wherein X_2-R_{14} together represent N_3 , NMe_2 , $NHAc$, $NHSO_2Me$, $NHCONHMe$, $NHCONHPh$, morpholine, imidazole, aminopyridine, or any one of:



106. (withdrawn-new) The composition of claim 72, where R_8 and R_9 , taken together, form a saturated or unsaturated cyclic ring of 1 to 4 carbon atoms and 1 to 3 nitrogen or oxygen

atoms and is optionally substituted with hydroxyl, protected hydroxyl, alkyloxy, amino, protected amino, alkylamino, aminoalkyl, or halogen.

107. (withdrawn-new) The composition of claim 72, where R_{10} is hydroxyl.
108. (withdrawn-new) The composition of claim 72, where R_{11} is hydrogen.
109. (withdrawn-new) The composition of claim 72, where Y and Z together are cyclopropyl.